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ABSTRACT

Presented is the seventh of 12 instructional kits, on the development of measurable objectives, for a performance based teacher education program which was developed by Project CHILD, a research effort to validate identification, intervention, and teacher education programs for language handicapped children. Included in the kit are directions for preassessment tasks for five performance objectives, a listing of the performance objectives (such as analyzing instructional objectives and activities in terms of behavioral variables and levels), instructions for five learning experiences (such as preparing objectives for a unit of study), a checklist for self-evaluation for each of the performance objectives, and guidelines for proficiency assessment of each objective. (DB)

ED100116

PROJECT CHILD

Ten Kit 7

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EC 070 986

TEN KIT 7

TITLE: Development of Measurable Objectives

APPROXIMATE TIME TO COMPLETE: 20 Hours

MATERIALS TO PURCHASE: Developing and Writing Performance Objectives
Educational Innovators Press, Tucson, 1970 (\$1.95)

INTRODUCTION:

The Development of Measurable Objectives Kit is designed to assist the student become adept at planning instruction in terms of the desired performance of the learner. After completing the Kit, the student should be able to state instructional goals explicitly and to develop instructional plans based on such goals.

PREASSESSMENT

Each package in this curriculum is initiated with a measure of the learner's knowledge and skills pertinent to that package. This is referred to as pre-assessment and is designed to determine your proficiency in each of the objectives established for the package. Depending upon the levels of behavior required by the objectives, preassessment may range from a matching quiz, through an interview with the instructor, to analysis of a video-taped classroom situation.

You should read the performance objectives stated for this kit and decide whether you feel proficient in any of the behaviors required. It is your option to request preassessment on each of the objectives in which you feel you are already proficient. For each objective there is a preassessment exercise, allowing the instructor to determine precisely which learning experiences you should complete. For example, if six objectives are prescribed for the kit and you request the preassessment exercises on four of the objectives, you will be required to complete the learning experiences for the two objectives in which you did not request preassessment. For the four objectives on which you requested preassessment, you will be required to complete only those learning experiences for the objectives on which you did not meet the proficiency required.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 1

Name _____ Date _____

Complete the following quiz, by correctly matching the behavioral variables on the right with the levels of behavior on the left. Proficiency requires at least 85 percent accuracy.

- | | |
|----------------------------|----------------|
| _____ 1. Evaluation | A. Affective |
| _____ 2. Organization | |
| _____ 3. Receive | |
| _____ 4. Comprehension | B. Psychomotor |
| _____ 5. Imitation | |
| _____ 6. Knowledge | |
| _____ 7. Application | C. Cognitive |
| _____ 8. Respond | |
| _____ 9. Manipulation | |
| _____ 10. Value | |
| _____ 11. Analysis | |
| _____ 12. Characterization | |
| _____ 13. Synthesis | |
| _____ 14. Precision | |
| _____ 15. Articulation | |
| _____ 16. Naturalization | |

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 1

Proficiency requires that the learner get 14 correct responses of the following 16:

- C 1.
- A 2.
- A 3.
- C 4.
- B 5.
- C 6.
- C 7.
- A 8.
- B 9.
- A 10.
- C 11.
- A 12.
- C 13.
- B 14.
- B 15.
- B 16.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 2

Name _____ Date _____

With 80 percent accuracy name and explain the significance of all the elements you would find in a well stated performance objective.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 2

1. Proficiency requires five correct of the following six:
 - A. Institutional variable - This element identifies exactly the person(s) who are expected to accomplish the objective.
 - B. Instructional variable - This element identifies precisely the content dealt with in the objective. It can be stated broadly as in reading, more specifically as in word attack skills, or even more exactly as in identification of words which follow the consonant-vowel-consonant pattern.
 - C. Behavioral variable - This element identifies the type of behavior to be developed and must distinguish whether the behavior is cognitive, affective or psychomotor; it also must establish the level of behavior to be developed; i.e. knowledge, receive or imitation.
 - D. Measurement - This element identifies the means by which the learner's accomplishment of the objective will be assessed.
 - E. Time needed - This element identifies the time limitations, if any, which will be placed upon the learner in his attainment of the objective. This may be expressed in days, weeks, months, or it may be specified by activities completed; e.g., after the student reads the story,-----
 - F. Proficiency level - This element identifies the degree of mastery which the learner is expected to attain. Proficiency may be expressed in terms of percentage, absolute number or content outline.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 3

1. Check out from your teacher supervisor five audio-tape recordings, listen to these recordings and with 80 percent accuracy identify the behavioral variable and level of the objective which the teacher is attempting to accomplish; e.g., cognitive-knowledge or psychomotor-imitation.

2. Check out from your teacher supervisor descriptions of five classroom situations, read these descriptions carefully and with 80 percent accuracy identify the behavioral variable and level which the teacher is attempting to accomplish; e.g., cognitive-knowledge or psychomotor-imitation.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 3Descriptions of Classroom SituationsSituation 1

The foreign language teacher has the task of teaching first year students how to make sounds that are unfamiliar to the native speaker of English. Acquisition of these sounds requires the student to use his speech organs in ways that are at first physically awkward. Mastery thus requires much practice and eventual coordination of mental and physical processes to produce the sounds as naturally as those of the native tongue.

In the early stages of this process the teacher introduces the new sound, e.g. the trilled r, by providing the student with a diagram of the mouth and nose with critical speech organs and their positions labeled. The teacher then points out on the diagram the different organs used and their correct positions in the production of the trilled r. In addition, the teacher shows the students a short film which features a speaker forming the trilled r both in isolation and in the context of words. Finally the teacher has the students, looking at the diagram and at her producing the sound, practice making the trilled r.

Situation 2

The high school English teacher is faced with the problem of teaching students to discriminate between good and poor poetry. While different poems admittedly appeal to different people, there are certain clues which the discriminating reader should be able to apply in order to recognize that the poet is appealing to either honest emotion or pure sentimentality.

Although the process of selective reading is an art which the student will hopefully continue to develop throughout his life, the English teacher encourages this development by introducing the criteria for selecting good poetry, demonstrating the application of these criteria to several poems and discussing the feelings aroused in the reader by the poems.

The teacher then assigns five new poems to the class and asks them to identify each poem as good or bad based upon the criteria already presented.

TEN KIT 7, Development of Measurable Objectives, PREASSESSMENT
Performance Objective 3, Descriptions of Classroom Situations

Situation 3

A major goal of the social studies teacher is to insure that students are able to practice the concepts studied in their classrooms in everyday situations. Thus, while the teacher obviously is interested in having students understand the maps which accompany their reading assignments and other tasks, he also wants the student to use the skill of thinking graphically every day.

In order to develop this ability to use a reading oriented skill in a different situation, the teacher has the student develop community maps, showing major thoroughfares, distinct areas of the community, natural features of the region, familiar institutions or agencies and other important characteristics. Although much awareness of the community itself is required in this objective, the teacher's major emphasis is upon the development of a useable skill, graphic thinking, in everyday activities.

Situation 4

The third grade teacher has one of the most basic chores of all the levels of education. Without committing the basic multiplication facts to memory, the student will have difficulty with mathematics throughout his school career and the remainder of his life. The third grade teacher is charged with providing the foundation of this knowledge.

Thus a significant part of the third grade math curriculum is devoted to practice, or drill, on multiplication facts. The drill includes many types of activities, beginning with mimeographed sheets of problems and including students using flashcards with and testing each other over mastery of these facts. The teacher also has multiplication bees, with the students forming teams and competing for small prizes; she uses bulletin board displays to reinforce this knowledge; she constantly reviews multiplication. All of these activities and more are directed toward the simple goal of having the student respond to the stimulus 8×7 with 56, or other accurate responses for the appropriate multiplication stimuli.

Situation 5

One sixth grade teacher spends what she considers to be too much time encouraging students to be neat and requiring them to observe simple rules of good housekeeping. What she would really like to do is to have the students take enough pride in the appearance of their work area to establish rules for themselves, to develop guidelines for enforcing these rules and to apply the rules to themselves.

TEN KIT 7, Development of Measurable Objectives, PREASSESSMENT
Performance Objective 3, Descriptions of Classroom Situations

Situation 5 (continued)

She proposes to the class a system in which they will in fact (1) develop housekeeping rules, (2) appoint rotating groups of three to judge each person on the basis of the rules and (3) establish a system of rewards for those who observe the rules. One restriction she makes is that the rewards system will only exist for a period of twelve weeks. At the end of that period she expects that the students will continue to observe the rules because they find working conditions more pleasant in a clean, well-organized classroom.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 3

1. Eighty percent of the responses on the following items must be correct:

	<u>Variable</u>	<u>Level</u>
<u>Tape 1</u>	Psychomotor	Imitation
<u>Clues:</u>	The lesson deals with the physical and mental processes required for writing; students have a model to follow and are given directions.	
<u>Tape 2</u>	Cognitive	Analysis
<u>Clues:</u>	Students are asked to isolate specific ways in which two animals are alike and different, requiring them to break down complete entities into their separate parts.	
<u>Tape 3</u>	Cognitive	Evaluation
<u>Clues:</u>	The student is asked to apply the criterion of experience to a series of statements to determine whether each statement is true or false.	
<u>Tape 4</u>	Cognitive	Knowledge
<u>Clues:</u>	The content involved is number facts, and the students are required simply to recall those facts in order to solve the problems.	
<u>Tape 5</u>	Psychomotor	Imitation
<u>Clues:</u>	Students are required to use physical and mental processes by listening to a record and following directions to perform certain exercise routines. Also the teacher provides a model for the students to observe.	

TEN KIT 7, Development of Measurable Objectives, Preassessment
Performance Objective 3

2. Eighty percent of the responses on the following items must be correct:

	<u>Variable</u>	<u>Level</u>
<u>Situation 1.</u>	Psychomotor	Imitation

Clues: Both physical and mental processes are involved; students are provided both directions and a model to copy.

<u>Situation 2.</u>	Cognitive	Evaluation
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Clues: The judgement of good and poor poetry requires the student to apply criteria to each poem and classify it as good or bad.

<u>Situation 3.</u>	Cognitive	Application
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Clues: This teacher wants the student to use skills and ideas acquired in one setting in a completely different context.

<u>Situation 4.</u>	Cognitive	Knowledge
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Clues: Memorizing, drilling, practicing are emphasized. Thinking processes are not required beyond the recall of the correct answer.

<u>Situation 5.</u>	Affective	Value
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Clues: The teacher expects the students to observe good housekeeping rules because they enjoy working in a clean, organized room.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 4

Name _____ Date _____

Write ten performance objectives, using the format presented in Developing and Writing Performance Objectives, for a fifth grade unit of study on railroad transportation in the United States between 1900-1925. These must include four objectives for the cognitive behavioral variable, three for the affective and two for the psychomotor. At least two levels within each variable must be included. (The unit topic may be altered upon the request of the student and the approval of the teacher supervisor, using these criteria:

- A. Limited to a specific grade level.
- B. Limited to a specific area of study; e.g. a particular time period and concept for social studies or a specific skill area for reading or math.)

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 4

Nine of the ten objectives written for this item must include

- A. Institutional variable
- B. Instructional variable
- C. Behavioral variable
- D. Measurement
- E. Time needed
- F. Proficiency level

Also, there must be four objectives in the cognitive domain, three in the affective domain and two in the psychomotor domain.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 5

Present to the instructor a unit which you have used previously and which is based upon the accomplishment of at least ten objectives.

TEN KIT 7Development of Measurable ObjectivesPREASSESSMENTPerformance Objective 5

The unit presented for preassessment must be acceptable on each of the following criteria:

- A. It must be based on at least ten objectives.
- B. All three behavioral variables must be provided for.
- C. Each objective must include the six elements listed above under Performance Objective 4.
- D. Learning activities must be designed specifically for accomplishment of objectives; thus, if an objective is stated at the synthesis level of cognitive behavior, the accompanying learning experience must require the learner to synthesize.
- E. Assessment devices are designed specifically to measure the attainment of the objectives; thus, if an objective is stated at the application level of cognitive behavior, there must be an assessment device which measures that application.

TEN KIT 7Development of Measurable Objectives**BEST COPY AVAILABLE**PERFORMANCE OBJECTIVES

Upon completing Ten Kit 7, Development of Measurable Objectives you will:

1. Demonstrate your knowledge of the three behavioral variables and the various levels within each variable by answering correctly at least fourteen items on a sixteen item, teacher-made, matching quiz.

2. Demonstrate your comprehension of the elements within a performance objective by correctly listing and explaining the significance of five of the six elements.

3. Be able to analyze various instructional objectives and activities to determine the variable and level at which they are directed as determined by your ability to score at the 80 per cent level in assigning audio-tape reproductions of classroom activities to the correct categories of variable and level.

4. Apply your understanding of the several variables and their levels by developing performance objectives for a predetermined unit of study, including a minimum of four levels within the cognitive domain, three within the affective domain and two within the psychomotor domain.

5. Based upon your objectives from Performance Objective 4, apply your understanding of the relationship between objective, activity and assessment by planning a unit in arithmetic, reading, science or social studies according to the format provided by the teacher supervisor and meeting the satisfaction of the teacher supervisor.

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 1

Complete the enclosed package entitled "Objectives-Self-Instructional Package #1." An individual conference with the instructor is optional after completing this package. If you have questions over material presented in the package or would like to have the instructor examine your work, schedule a conference. Otherwise proceed to the next activity.

(Performance Objectives 1-5)

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 1Performance Objectives 1-5

The package to be completed for the first learning experience includes peer evaluation and is designed for gradual progress toward mastery of writing objectives that include audience, behavior, conditions and degree. If there are questions about the objectives which the learner has written, check them to be sure that these four factors are included.

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 2

Read Developing and Writing Performance Objectives, Educational Innovators Press (Tucson, 1970). Complete each written exercise in this booklet. This is the system for writing objectives that will be used for the remainder of this kit and other kits in this program.

(Performance Objectives 1 and 2)

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 2Performance Objectives 1 and 2

This activity also has a built in evaluation in the form of short objective tests over the various sections of the booklet. If questions arise over any of these tests, you should use the content of the booklet to show the student where a question is answered or what process is followed.

TEN KIT 7

Development of Measurable Objectives

LEARNING EXPERIENCE 3

Secure from the instructor a list of thirty instructional objectives and description of ten instructional activities.

A. Analyze each objective to determine whether it contains each of the six elements specified for a performance objective. Rewrite those objectives which are incomplete so that each one is written as a performance objective.

B. Analyze and write appropriate objective(s) for each of the instructional activities. Be sure to include all elements within your objective; designate the behavioral variable to which each objective applies and the level of behavior required.

C. In groups of five discuss the work performed in A and B. Each person should present his work for the approval of the other four; three of the four must agree that the work is accurate. If this is not the case, the work should be revised until it is satisfactory to three. Have each approving peer initial the work and submit it to the teacher supervisor.

(Performance Objective 3)

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 3Performance Objective 3

Instructional Objectives

1. To give the student a sense of belonging through the home room period
2. Tenth grade English students will analyze social situations to determine what attitudes encourage the formation of gangs.
3. After reading West Side Story, tenth grade English students will analyze the Puerto Ricans' cohesiveness by explaining in a 1-1 1/2 pp. narrative that it arises from several factors, including at least three of the following:
 - a. Family unity
 - b. Common nationality
 - c. Rejection by the majority
 - d. Safety within the minority
4. After reading the four short stories, the eighth grade class will recognize that good intentions are not enough.
5. At the end of the first six weeks students in Group II will have gained one month in reading achievement.
6. Sixth grade geography students will analyze a map of their community to determine primary street and rail routes.
7. Seventy percent of the class members will appreciate the poem.
8. At the end of the first semester eighty percent of the first grade students will comprehend at least at the one year, five month reading level as measured by the Metropolitan Achievement Test.
9. After working through the unit on environmental protection, each sixth grade student will have developed an increased awareness of the beauty of his surroundings.
10. After completing the West Side Story unit, the ninth grade English class will have an improved understanding of the problems of minority groups in the United States.
11. At the end of each week ninety percent of the students in Group III Spelling will know the correct spelling of at least fourteen of the sixteen words assigned for that week as demonstrated on a weekly spelling test.
12. After doing the experiential story on "Our Visit to the Telephone Company" every student will be able to read on sight at least nine of the twelve new words to be introduced.

TEN KIT 7, Development of Measurable Objectives, Performance Objective 3
Learning Experience 3

13. All students should know the multiplication facts through six.
14. At the end of the first two weeks of school, twenty-five of the thirty entering first grade students will be able to manipulate pencils and paper to form correctly the letters a, b, c, d, e u, and t, following the teacher's example on the board, as demonstrated on daily work sheets.
15. All second grade students will be able to write all twenty-six letters of the alphabet in correct sequence as measured by a paper and pencil test.
16. All fifth grade students will be able to demonstrate precision in performing the trampoline back-drop by successfully completing eight of ten attempts in this maneuver.
17. Twelfth grade civics students will know the contents of each amendment to the United States Constitution with 90 percent accuracy.
18. At the conclusion of six weeks, all students in the first three grades will respond to discussion of the cafeteria rules by obeying each of those rules whenever in the cafeteria.
19. After memorizing four poems, students in Group IV of the fifth grade will understand the creativity necessary for writing a poem.
20. After completing the Biology I course, seventy-five percent of the freshmen will demonstrate the value they place on their health by refraining from smoking or drinking.
21. At the conclusion of five months of APSL study, all fifth grade students will articulate their mastery of letter formation by writing correctly all letters in all the words of a thirty item list.
22. When the unit on Japan has been finished, all fourth grade geography students will have learned the major sources of income for the people of Japan.
23. At the end of the semester eighth grade history students will evaluate the two party system of government by listing at least ten favorable and five unfavorable characteristics of such a system.
24. All tenth grade students, at the end of the first semester, will synthesize their understanding of the two novels read during that semester.
25. After two days' instruction, at least five of the seven students in Vocational Education II will imitate the instructor's use of the wood lathe.
26. After one week of instruction the six students in APSL instruction will demonstrate their knowledge of the initial consonant sound by performing at the 90 per cent level on a twenty item test over initial consonant sounds.
27. The second year typing student will type at least 90 words per minute (corrected score) at the end of the year.

TEN KIT 7, Development of Measurable Objectives, Performance Objective 3
Learning Experience 3

28. The student in Homemaking I will apply her understanding of food planning by preparing an evening meal for six adults.

29. After completing the five worksheets on fractions, fourth grade students will be able to score at least 90 percent on a twenty item teacher made test over addition and subtraction of fractions.

30. With an accurate model and adequate directions, 80 percent of the second grade students will be able to do the side straddle hop in physical education class.

TEN KIT 7LEARNING EXPERIENCE 3Performance Objective 3

Description of Instructional Activities

1. This is one of a series of activities which have occurred in the television program "Sesame Street", which is an educational program for preschool children.

In this particular skit there are two characters, Ernie and Bert. Both characters have been to the grocery store. Ernie bought a loaf of bread at the store and Bert bought a jar of peanut butter. Following is the dialogue which occurs.

BERT: Hey! Look what I got at the store. A jar of peanut butter!

ERNIE: That's great! I got a loaf of bread!

BERT: Hey, Ernie! What are you going to eat with your bread?

ERNIE: Nothing. I like just the bread by itself. (starts eating a slice of bread)

BERT: Uh, Ernie. I just had an idea.

ERNIE: (Talking around a mouthful of bread.) Yeah, Bert. What's that?

BERT: If you gave me a slice of your bread, I would have a peanut butter sandwich.

ERNIE: (Eating his bread) Uh, I don't think so, Bert. I'll just eat my bread.

Bert watches Ernie eat while he thinks the situation over. Then he has another idea.

BERT: Say, Ernie. I've got a better idea. Let's cooperate. You give me a slice of your bread and I'll put some peanut butter on it. Then I'll have a peanut butter sandwich. I'll give you some of my peanut butter and you put it on a slice of your bread. Then you'll have a peanut butter sandwich. We'll cooperate and both of us will have a peanut butter sandwich.

ERNIE: Boy, Bert, that's a great idea. I would really like a peanut butter sandwich. Let's cooperate.

They complete the trade and eat the sandwiches with gusto.

TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

2. A fourth grade teacher using the auditory discrimination manual of the Alphabetic Phonetic Structural Linguistic materials conducts thirty minutes of drill every day. The drill consists of exercises in which the student must depend wholly upon the auditory process in order to determine the correct response to make. There is much repetition in the material covered, and the teacher must be very careful to enunciate the drills precisely and rapidly.

A typical day would include a drill on initial consonant sounds with the teacher reading a list of twenty words and the student writing the letter which represents the beginning sound of each word; e. g.

1. dog d
2. log l
3. back b
4. cat c
5. sack s
6. tack t
7. pat p
8. rack r
9. sat s
10. mat m

The next drill would likely find the teacher reading yet another list of words and the student writing the word family to which each word belongs; e.g.

1. bunch unch
2. march arch
3. lack ack
4. pot ot
5. rat at

Another familiar drill consists of the students' simply repeating each word in the series as the teacher calls it out; e.g.

1. pat pat
2. cat cat
3. sack sack
4. sat sat
5. pack pack

Yet another drill which will occur almost daily in this classroom has the teacher call out groups of three words with two of each group belonging to one word family and the third not belonging to that word family; the student must write the word family that does not belong; e.g.

1. rack, rat, sack at
2. rot, march, starch ot
3. long, log, song og
4. far, star, fat at
5. sit, sag, bit ag

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TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

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TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

3. The Typing I teacher devotes a part of his class each day to speed drill. In conducting this drill, he permits his students to practice, or "warm-up", for three minutes. He then assigns them either one ten minute exercise or two five minute exercises. In either case the student is working for maximum accuracy and minimum time. He types a letter or similar exercise and strictly measures the time spent in typing. Upon completing the typing, the student must compute the gross number of words typed, the gross number of words typed per minute, the number of mistakes made and the net number of words typed per minute. Only with practice does the student develop speed and accuracy in his typing.

TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

4. This instructional activity covers the entire school day and as a result is intermingled with many other activities. It is directed toward only one student.

As the teacher explains to one student an assignment which is in her folder for the day, she sees Jeff looking into his folder to find his assignments for the day. The teacher stops her explanation in mid-sentence, walks over to Jeff, places her hand on his shoulder and says, "I am very happy to see you beginning your work for the day, Jeff. After you have looked over your assignments, raise your hand if you have any questions, and I will come to your desk. It's certainly nice to see you beginning your work now."

As the day continues, the teacher several times sees Jeff playing, day dreaming or avoiding his assignment in various ways; she ignores him. When she sees him begin working on some math problems, she immediately goes to his desk, places her hand on his shoulder and says, "Jeff, I certainly am glad that you are doing this work in math." She sees that his answers are accurate and says, "That's very good, Jeff. Your answers are all correct. I am glad you are doing so well."

This pattern continues throughout the day. Jeff plays much but does not bother other children; the teacher ignores him. Jeff begins working on one of his assignments for the day; the teacher interrupts whatever she is doing, goes to Jeff's desk and praises him.

TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

5. This instructional activity covers several weeks and includes at least two field trips and several reading and written assignments. After reading and talking about dairy farms in class, a group of fifth grade students visits a dairy farm and talks to the people who work there. They have carefully prepared a list of questions to be answered about the dairy farm's operation and just as carefully seek out the answers during the visit.

Upon returning to class, the group discusses their trip and pools the information they have gathered. Using their answers and other sources of information, the group formulates the questions they would like to have answered about the processing of milk and milk products at a local creamery. They follow the same visiting procedure, being sure to answer the questions which they have listed.

The teacher follows up these activities by dividing the students into groups and assigning the groups to complete these tasks:

1. Visit a local trucking company engaged in hauling milk and milk products, to learn their role in the distribution of these goods to the community
2. Visit several supermarkets to determine the volume of milk products sold in local stores
3. Survey class members to estimate the amount and type of milk products used by families in the community

Each group reports its findings to the class.

As a means of determining whether the students have attained the objective established for this series of activities, the teacher asks each student to prepare, in narrative or chart form, an explanation of the processes which a ten gallon can of milk undergoes in route from cow to table.

TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

6. Another example from the television program "Sesame Street" concerns the presentation of the letter e. Each day's program for four weeks will at four intervals during the hour present the letter e. Each time the letter e will be repeated orally and visually at least fifteen times. This is usually done so that the pitch of the oral presentation rises as the size of the visual presentation increases, thus e e e e e e e e. Music accompanies the oral and visual presentation of e, and there are usually some cartoon characters involved in such ways as eating the e's as fast as they appear on the screen.

Note: "Sesame Street" is designed for teaching preschool children.

TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

7. The physical education instructor has a group of twenty students who have been learning how to perform on the trampoline during the past two weeks. He has determined that all twenty students now have mastered the basic concepts required to begin learning the routine of performing one forward flip.

He gives each student a mimeographed sheet with directions for performing the maneuver and diagrams of the performer's position at various points during the maneuver. The teacher reviews with the students this handout, pointing out the essential elements. The teacher then demonstrates the maneuver on the trampoline after telling the students exactly what to look for. Each student is then allowed to work out on the trampoline for three minutes, with the option of trying the forward flip. Periodically between student turns, the instructor again demonstrates the maneuver and reviews with the students the directions and diagrams.

TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

8. An English teacher had her twelfth grade class read Karl Shapiro's poem "Auto Wreck." After the students had had sufficient time to read and study the poem, the teacher directed a discussion in which she attempted to help the students understand their feelings about and reactions to "Auto Wreck." A question that she asked was:

"Can you pick out at least three words, descriptions or other factors which the poet used to create in you a distinct mood that you can describe?"

TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

9. Another instructional example taken from "Sesame Street" is its presentation of number concepts. Several times during each hour segment of the program, the numbers one through ten are reviewed. This usually follows a somewhat consistent pattern of having an oral counting of 1-2-3-4-5-6-7-8-9-10 accompanied by a pattern of dots or other symbols that correspond in number to the numeral being said. Thus, when the viewer hears one, he sees one dot • ;

when he hears two, another dot appears • • ; when he hears three a third dot

appears • • • ; the process continues through ten and finally includes ten dots on

the television screen  . This is then reversed so that the viewer hears Ten

and sees ten dots; next he hears nine and one dot disappears  , continuing back

to one • .

This is repeated many, many times and is accompanied by music.

Note: "Sesame Street" is designed for teaching preschool children.

TEN KIT 7, Description of Instructional Activities, Performance Objective 3
Learning Experience 3

10. The eleventh grade consumer economics teacher makes the following assignment:

"There are several magazines that collect information on the frequency of breakdowns of different appliances and the cost to get these machines repaired. This information is then made public and provides a good source to the consumer for making wise decisions about the purchase of home appliances. Now, we have named several considerations to make when thinking about buying an appliance. Let's list them on the board.

1. What kind of fuel does the appliance use?
2. How much fuel does the appliance use in comparison to other appliances that use the same kind of fuel?
3. Is the appearance of the appliance satisfactory to our needs?
4. What is the initial cost of the appliance?
5. What is the record of the appliance in frequency of breakdown and cost of repair?

I want you to use this list in completing your assignment for next Monday. I am going to put the names of two blenders on the board and give you some information about these blenders on mimeographed sheets. I want you to choose the blender which you would purchase and explain your reasons for making the decision. Write your explanation and be sure to use the list of considerations I have put on the chalkboard."

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 3Performance Objective 3

- A. Following is the list of thirty objectives. Those which are adequate performance objectives are simply listed as complete; others are rewritten. The ones which are rewritten here may be written somewhat differently by the student, but should include the six elements of a performance objective.
1. At the end of one semester of required attendance in homeroom, eighty percent of the seventh grade students will demonstrate their value of home room by expressing a sense of belonging to that group in a written narrative about their feelings toward the school.
 2. After reading the assigned material, the tenth grade English students will analyze social situations to determine what attitudes encourage the formation of gangs by correctly identifying in a hypothetical situation five elements which could lead to the formation of a gang.
 3. Complete
 4. After reading the four short stories, 65 percent of the eighth grade English class will synthesize their understanding of the stories by explaining on a written test that people must follow through with ethical action in order to make good intentions effective.
 5. At the end of the first six weeks of school students in Group II will comprehend reading material at least one month of a grade level higher than previously as measured by the Metropolitan Achievement Test.
 6. After completing the unit on map study, 90 percent of the sixth grade geography students will be able to demonstrate their ability to analyze a map by identifying all of the primary streets and rail routes on a map of their town.
 7. After studying four poems, 95 percent of the fourth grade class will respond by memorizing one six to ten line poem of their choice.
 8. Complete
- ★

TEN KIT 7, Development of Measurable Objectives, Learning Experiences

LEARNING EXPERIENCE 3 (continued)

9. After completing the environmental protection unit, each sixth grade student should comprehend the need to protect the environment, as evidenced by responding correctly to at least 70 percent of the items on a teacher made test.

10. After completing the West Side Story unit, the ninth grade English class will demonstrate their comprehension of minority group problems in the U. S. by including at least two of the problems discussed in a skit presented to their peers.

11. Complete

12. After doing the experiential story on "Our Visit to the Telephone Company," every student will know on sight at least nine of the twelve new words to be introduced as indicated by their reading the story orally to the teacher.

13. After completing grade 3, all students will know the multiplication facts through six as demonstrated by their performance at the 70 percent level on a teacher made test over the multiplication facts through six.

14. Complete

15. At the end of the first semester all first grade students will demonstrate their knowledge of all twenty six letters of the alphabet and their correct place in the sequence by writing the alphabet correctly with no model or prompting.

16. After two hours in instruction all fifth grade students will be able to demonstrate precision in the trampoline back drop by successfully completing eight of ten attempts in this maneuver.

17. Twelfth grade civics students, after two week's study, will know the contents of the amendments to the U. S. Constitution as demonstrated by their performance at the 70 percent level on a teacher made test.

18. Complete

19. After memorizing four poems, students in Group IV of the fifth grade class will demonstrate their comprehension of the creativity necessary for writing a poem by explaining with 70 percent accuracy the various elements of the poems on a test.

20. After completing the Biology I course, 70 percent of the freshmen will demonstrate the value they place on their health by indicating on an anonymous questionnaire that they do not use tobacco, alcohol or other drugs.

21. Complete

TEN KIT 7, Development of Measurable Objectives, Learning Experiences

LEARNING EXPERIENCE 3 (continued)

22. After completing the unit on Japan, all fourth grade geography students will demonstrate their knowledge of the major sources of income for the Japanese people by correctly listing at least 90 percent of these sources.

23. Complete

24. All tenth grade students, at the end of the first semester, will synthesize their understanding of the two novels read during that semester by listing at least five major ideas presented by the novelists.

25. After two days' instruction at least five of the seven students in Vocational Education II will imitate the instructor's use of the wood lathe by scoring at least 95 percent on the check list for this tool.

26. Complete

27. At the end of two years of typing instruction the student will demonstrate his naturalization of the typing process by typing consistently at least 90 words per minute on ten five minute tests.

28. At the end of January each student in Homemaking I will apply her understanding of food planning by planning an evening meal for six adults that is at least 90 percent acceptable according to check list for that task.

29. After completing the five worksheets on fractions, fourth grade students will know how to add and subtract fractions as indicated by their 90 percent performance on a twenty item test.

30. After a twenty minute practice session 80 percent of the second grade students will be able to imitate the teacher's example of the side-straddle-hop as measured by a four point checklist.

- B. Each objective written should include the elements of a performance objective. They should also be written for the appropriate behavioral variable and level indicated below:

	<u>Variable</u>	<u>Level</u>
<u>Activity 1:</u>	<u>Affective</u>	<u>Value</u>

Clues: Primary thrust is upon how to behave in a cooperative manner and the benefits one might expect from cooperating rather than understanding the meaning of the word. The "teacher" has no

TEN KIT 7, Development of Measurable Objectives, Learning Experiences

LEARNING EXPERIENCE 3 (continued)

control over the behavior of the learner but must rely upon the learner's belief in cooperating.

Activity 2 Cognitive Knowledge

Clues: There is much emphasis upon drill and repetition, and the student is obviously expected to respond from memory.

Activity 3 Psychomotor Articulation

Clues: Typing is obviously a motor skill which requires coordination of mental and physical skills. Emphasis is placed on the need for practice to build speed and accuracy.

Activity 4 Affective Value

Clues: This is clearly an attempt by the teacher to develop attitude and habits rather than to increase the student's understanding of subject matter. She appears to be trying to reward desirable behavior so that the student will act upon his value of the work rather than comply with her commands.

Activity 5 Cognitive Synthesis

Clues: The last paragraph implies that one overall objective has been established for the whole series of activities on dairy farming, milk processing and milk product consumption. The assessment of the objective is an activity which requires the students to put together the pieces of their work to provide a complete picture of milk from cow to table.

Activity 6 Cognitive Knowledge

Clues: The only content presented is the visual image e and the sound e. There is nothing to understand, only to remember that e = e.

Activity 7 Psychomotor Imitation

Clues: The activity involves a combination of mental and physical processes. Emphasis is placed upon the student's having directions (mimeograph sheet) and model (instructor's example).

TEN KIT 7, Development of Measurable Objectives, Learning Experiences

LEARNING EXPERIENCE 3 (continued)Activity 8CognitiveAnalysis

Clues: The teacher has taken a complete entity (either the whole poem or the first part) and asked the students to isolate and study specific aspects of that entity which contribute to the mood created by the whole.

Activity 9CognitiveComprehension

Clues: The key seems to be that rather than simply having students remember that the word one (oral) equals 1, the objective is to have the students comprehend the idea that objects are assigned a number depending on how many objects of a kind there are. Thus if there is one •, the number is 1; if there are two ••'s, the number is 2; and on through ten.

Activity 10CognitiveEvaluation

Clues: The teacher, after establishing a list of criteria to use in selecting home appliances, asks the students to judge two appliances and select one based on the established criteria.

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 4

Select from an area familiar to you a body of content suitable for the development of a unit of study. Outline the content which would be included in such a unit and develop performance objectives appropriate to the content. Be sure to prepare objectives in each of the three behavior variables and at several levels of accomplishment within each variable. Present your work to peers in groups of five, requiring at least three persons' approval of your work.

(Performance Objective 4) _____

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 4Performance Objective 4

1. This learning experience requires the student to get at least three of his peers to approve his work; he need not request help from the teacher supervisor or ask that the teacher supervisor approve the work in this activity. However, if assistance or approval is sought, the following might be used as guidelines:
 - a. Point out the relationship between Learning Experiences 4 and 5 so that the student will choose appropriate content for 5 as well as 4.
 - b. Check to see that the student has objectives in the cognitive, affective and psychomotor variables.
 - c. Check to see that all objectives include the six elements of a performance objective.
 - d. Check to see that the various levels within the behavioral variables are represented; e.g. you might use three cognitive levels and two levels each in the affective and psychomotor variables as a minimum.
 - e. Check to see that the objectives are appropriate to the content. Examples: If the unit is physical education, the psychomotor variable may be emphasized. Most units in social studies or English should go well beyond the knowledge level of the cognitive variable.

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 5

Using the content and objectives completed in Learning Experience 4, plan a unit of study (approximately three weeks in duration) including learning experiences for the attainment of those objectives already specified and measurement devices which can be used to determine whether the objectives have been attained. With the completed unit provide a written explanation of the relationships between the content, objectives, learning experiences and assessment devices of your unit. Submit the following items to your instructor and schedule an individual conference to discuss them with him.

- a. Outline of content
- b. List of performance objectives
- c. Description of learning experiences
- d. Assessment devices

Your written explanation should emphasize (a) the appropriateness of objectives for the content - cognitive, affective or psychomotor; level of mastery; number of objectives to be accomplished; (b) the relationships of learning experiences to objectives-relevance; complexity; sufficiency; tangibility; (c) the probability that your assessment devices will measure the objectives-behavioral variable; level of behavior expected; identifiable proficiency.

(Performance Objective 5)

TEN KIT 7Development of Measurable ObjectivesLEARNING EXPERIENCE 5Performance Objective 5

1. This activity will require you to approve the student's final task in this kit. The unit developed for this learning experience should be evaluated on the following criteria:
 - a. Objectives should be written for each of the behavioral variables- cognitive, affective and psychomotor.
 - b. Each objective should include the six elements of a performance objective.
 - c. Objectives should be written to provide for the various levels within each category of behavior; at least three levels within the cognitive domain and two within the affective variable should be included.
 - d. The objectives should be appropriate to the content.
Example: The psychomotor variable might be emphasized for a physical education unit; the cognitive variable might be emphasized for English.
 - e. Learning experiences should be related to objectives in terms of relevance and complexity.
 - f. The assessment devices should be designed to measure the behavioral variable and level stated in the objective.

SELF EVALUATION

The learning experiences in this kit are accompanied by a self evaluation checklist. These are provided so that you may study a given performance objective, complete the learning experience(s) designed for that objective and determine for yourself whether you have completed the assignment satisfactorily. The primary purpose of self evaluation is to allow you to review your own progress before requesting the proficiency assessment exercises for the kit. After you have completed the learning experiences assigned to you for this kit, you should request the self evaluation checklist. Review the checklist carefully; if there are any indications that you have not completed a learning experience satisfactorily, either go back to the learning experience for a review or schedule a conference with your teacher supervisor. If your response to the checklist indicates satisfactory completion of all the learning experiences, schedule proficiency assessment.

TEN KIT 7Development of Measurable ObjectivesSELF-EVALUATION

For each question below place a check mark in either the yes or no column, depending upon how you would rate your understanding or skill referred to in the question. Each yes response indicates your readiness to proceed to the next step; each no response indicates your need to review the learning experience(s) for the performance objective to which the item is keyed.

Performance Objective 1

YES NO

- | | |
|--------|--|
| — — | 1. Did I complete satisfactorily each of the written exercises in the book <u>Developing and Writing Performance Objectives</u> ? |
| — — | 2. Do I remember the behavioral variables and levels introduced in the book <u>Developing and Writing Performance Objectives</u> ? |

TEN KIT 7

Development of Measurable Objectives

SELF-EVALUATION

For each question below place a check mark in either the yes or no column, depending upon how you would rate your understanding or skill referred to in the question. Each yes response indicates your readiness to proceed to the next step; each no response indicates your need to review the learning experience(s) for the performance objective to which the item is keyed.

Performance Objective 2.

YES NO

- | | | |
|---|---|---|
| — | — | 1. Did I complete satisfactorily each of the written exercises in the book <u>Developing and Writing Performance Objectives</u> ? |
| — | — | 2. Do I remember the six elements of a performance objective? |
| — | — | 3. Can I explain the significance of the institutional variable in a performance objective? |
| — | — | 4. Can I explain the significance of the instructional variable in a performance objective? |
| — | — | 5. Can I explain the significance of the measurement in a performance objective? |
| — | — | 6. Can I explain the significance of the time needed in a performance objective? |
| — | — | 7. Can I explain the significance of the proficiency level in a performance objective? |

TEN KIT 7Development of Measurable ObjectivesSELF-EVALUATION

For each question below place a check mark in either the yes or no column, depending upon how you would rate your understanding or skill referred to in the question. Each yes response indicates your readiness to proceed to the next step; each no response indicates your need to review the learning experience(s) for the performance objective to which the item is keyed.

Performance Objective 3

YES NO

- | | | |
|-----|-----|---|
| ___ | ___ | 1. Did I successfully complete Learning Experience 1? |
| ___ | ___ | 2. Did three of the four persons (besides myself) in my group in Learning Experience 3 agree that my work was accurate? |

TEN KIT 7Development of Measurable ObjectivesSELF-EVALUATION

For each question below place a check mark on either the yes or no column, depending upon how you would rate your understanding or skill referred to in the question. Each yes response indicates your readiness to proceed to the next step; each no response indicates your need to review the learning experience(s) for the performance objective to which the item is keyed.

Performance Objective 4

YES NO

- | | | |
|-----|-----|---|
| ___ | ___ | 1. Did I outline the content of a unit for Learning Experience 4? |
| ___ | ___ | 2. Did my objectives for Learning Experience 4 include the cognitive, affective and psychomotor behavior variables? |
| ___ | ___ | 3. Did my objectives for Learning Experience 4 include the various levels of the cognitive, affective and psychomotor behavior variables? |
| ___ | ___ | 4. Did three of my peers approve my objectives for Learning Experience 4 as satisfactory? |

TEN KIT 7Development of Measurable ObjectivesSELF-EVALUATION

For each question below place a check mark in either the yes or no column, depending upon how you would rate your understanding or skill referred to in the question. Each yes response indicates your readiness to proceed to the next step; each no response indicates your need to review the learning experience(s) for the performance objective to which the item is keyed.

Performance Objective 5

YES NO

- | | |
|---|---|
| ☐ ☐ | 1. Did I plan learning experiences and assessment devices for the objectives written in Learning Experience 4? |
| ☐ ☐ | 2. Did I explain in writing the relationships between content, objectives, learning experiences and assessment devices of the unit developed for Learning Experience 5? |
| ☐ ☐ | 3. Did I gain the teacher supervisor's approval of the unit I developed for Learning Experience 5? |
| ☐ ☐ | 4. Did I make the changes recommended by the teacher supervisor for the unit which I developed for Learning Experience 5? |

PROFICIENCY ASSESSMENT

When you have completed each of the learning experiences assigned to you for this kit and through the self evaluation procedures have determined that you achieved the intended results, you should request your instructor to assess your proficiency in the performance objectives stated at the beginning of this kit.

Although proficiency assessment may take any one of many forms, it always has the single purpose of measuring your attainment of the performance objectives for which the kit is planned. Thus, it is structured to assess all of and only those behaviors stated in the objectives.

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 1

Name _____ Date _____

Complete the following quiz, by correctly matching the behavioral variables on the right with the levels of behavior on the left. Proficiency requires at least 85 percent accuracy.

- | | |
|----------------------------|----------------|
| _____ 1. Evaluation | A. Affective |
| _____ 2. Organization | |
| _____ 3. Receive | |
| _____ 4. Comprehension | B. Psychomotor |
| _____ 5. Imitation | |
| _____ 6. Knowledge | |
| _____ 7. Application | C. Cognitive |
| _____ 8. Respond | |
| _____ 9. Manipulation | |
| _____ 10. Value | |
| _____ 11. Analysis | |
| _____ 12. Characterization | |
| _____ 13. Synthesis | |
| _____ 14. Precision | |
| _____ 15. Articulation | |
| _____ 16. Naturalization | |

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 1

Proficiency requires that the learner get 14 correct responses of the following 16:

C 1.

A 2.

A 3.

C 4.

B 5.

C 6.

C 7.

A 8.

B 9.

A 10.

C 11.

A 12.

C 13.

B 14.

B 15.

B 16.

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 2

Name _____ Date _____

With 80 percent accuracy list and explain the significance of each of the six elements within a performance objective.

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 2

1. Proficiency requires five correct of the following six:

- A. Institutional variable - This element identifies exactly the person(s) who are expected to accomplish the objective.
- B. Instructional variable - This element identifies precisely the content dealt with in the objective. It can be stated broadly as in reading, more specifically as in word attack skills, or even more exactly as in identification of words which follow the consonant-vowel-consonant pattern.
- C. Behavioral variable - This element identifies the type of behavior to be developed and must distinguish whether the behavior is cognitive, affective or psychomotor; it also must establish the level of behavior to be developed; i.e. knowledge, receive or imitation.
- D. Measurement - This element identifies the means by which the learner's accomplishment of the objective will be assessed.
- E. Time needed - This element identifies the time limitations, if any, which will be placed upon the learner in his attainment of the objective. This may be expressed in days, weeks, months, or it may be specified by activities completed; e.g., after the student reads the story,-----
- F. Proficiency level - This element identifies the degree of mastery which the learner is expected to attain. Proficiency may be expressed in terms of percentage, absolute number or content outline.

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 3

Schedule with your teacher supervisor a conference in which you will be asked to identify with 80 per cent accuracy the behavioral variable and level of the objective which the teachers are trying to accomplish on 5 audio-taped recordings of classroom situations.

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 3

Eighty percent accuracy on the following responses are required for proficiency:

	<u>Variable</u>	<u>Level</u>
<u>Tape 1</u>	Affective	Respond
<u>Clues:</u>	Students are required to respond by listening to what others are saying as measured by their ability to paraphrase what they hear. Listening is further emphasized by having a third person determine whether the paraphrasing is accurate.	
<u>Tape 2</u>	Cognitive	Synthesis
<u>Clues:</u>	Students are asked to create something new. The word imagination is used repeatedly.	
<u>Tape 3</u>	Psychomotor	Imitation
<u>Clues:</u>	Students are provided both models and directions to reproduce geometric designs, which requires coordination of mental and physical processes.	
<u>Tape 4</u>	Cognitive	Analysis
<u>Clues:</u>	The student must break words down into their separate parts.	
<u>Tape 5</u>	Psychomotor	Manipulation
<u>Clues:</u>	Students are asked to reproduce a series of physical acts using only the directions that are provided. They are reminded that in earlier lessons a model was provided but that in this lesson they must follow the directions without a model.	

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 4

Name _____ Date _____

Write ten performance objectives for a unit of study on the United States' treatment of the American Indian between 1850 and 1900; include at least four different levels within the cognitive variable, three levels within the affective domain and two levels within the psychomotor domain.

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 4

Proficiency requires:

- A. Ten performance objectives
- B. Four different levels within the cognitive domain
- C. Three different levels within the affective domain
- D. Two different levels within the psychomotor domain
- E. Ninety percent of the objectives contain all six elements of a performance objective

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 5

The unit developed for Learning Experience 5 will be used to determine proficiency for this objective. Your teacher supervisor should have checked you out of this objective when that unit was approved; if that was not done, check with your teacher supervisor.

TEN KIT 7Development of Measurable ObjectivesPROFICIENCY ASSESSMENTPerformance Objective 5

1. This activity will require you to approve the student's final task in this kit. The unit developed for this learning experience should be evaluated on the following criteria:
 - a. Objectives should be written for each of the behavioral variables- cognitive, affective and psychomotor.
 - b. Each objective should include the six elements of a performance objective.
 - c. Objectives should be written to provide for the various levels within each category of behavior; at least three levels within the cognitive domain and two within the affective variable should be included.
 - d. The objectives should be appropriate to the content.
Example: The psychomotor variable might be emphasized for a physical education unit; the cognitive variable might be emphasized for English.
 - e. Learning experiences should be related to objectives in terms of relevance and complexity.
 - f. The assessment devices should be designed to measure the behavioral variable and level stated in the objective.